1x2 HDMI Splitter/Repeater over Cat.X with Local Out

User Manual

15-HS102TR

Safety and Notice

The **15-HS102TR 1x2 HDMI Splitter/Repeater over Cat.X with Local Out** has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipments, the **15-HS102TR** should be used with care. Please read and follow the safety instructions to protect yourself from possible injury and to minimize the risk of damage to the unit.

- Follow all instructions and warnings marked on this unit.
- Do not attempt to service this unit yourself, except where explained in this manual.
- Provide proper ventilation and air circulation and do not use near water.
- Keep objects that might damage the device and assure that the placement of this unit is on a stable surface.
- Use only the power adapter and power cords and connection cables designed for this unit.
- Do not use liquid or aerosol cleaners to clean this unit. Always unplug the power to the device before cleaning.

TABLE OF CONTENTS

- INTRODUCTION 2
- FEATURES 2
- SPECIFICATIONS 3
- PANEL DESCRIPTIONS 4
- PACKAGE CONTENTS 4
- CONNECTION DIAGRAM 5
- PIN DEFINITION 6
- NOTICE 7
- WARRANTY 8

INTRODUCTION

The **15-HS102TR 1x2 HDMI Splitter/Repeater over Cat.X with Local Out** allows you to distribute one of the two HDMI/DVI video sources 2 separate HDTV displays including one remotely cascade output via Cat-5/5e cost effective cable. This splitter offers the most flexible solution by which the high definition video and high quality audio can be transmitted to different local locations through HDMI cables and also to the next stage over a long distance without degrading the quality. The cascade ability allows pure digital video and audio broadcast station by station and therefore make extending HDMI compliant video and audio anywhere feasible.

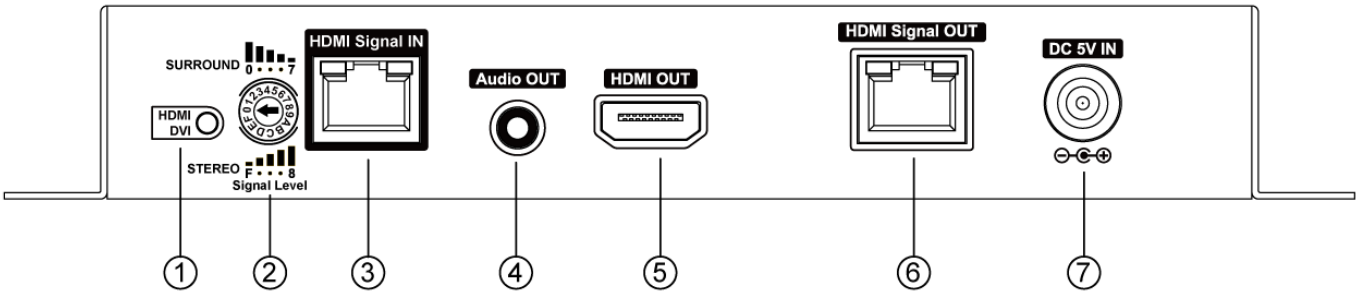
FEATURES

- State-of-the-art Silicon Image (founder of HDMI) chipset embedded for utmost compatibility and reliability
- Support HDMI Deep Color & 3D / DVI 1.0 compliant
- HDCP 1.1 compliant
- Regenerates the HDMI signal
- Supports audio output
- Extends up to 60m (200ft) (720p / 1080i) of input Cat.X cable
- Extends up to 15m (50ft) of output HDMI cable
- Extends up to 60m (200ft) (720p / 1080i) of output Cat.X cable
- Extends up to 40m (130ft) (1080p) of output Cat5/6 cable
- Minimizes the cable skew by adjustable 8-level equalization control
- Pure unaltered uncompressed 7.1ch digital HDMI over Cat.X cable transmission
- Allows cascading
- Perfectly integrated with other HDMI over Cat.X series products

SPECIFCATIONS

Model Name	**15-HS102TR**
Technical	
Role of usage	1x2 Distribution Amplifier Transmitter [TX]
HDMI compliance	HDMI Deep Color & 3D
HDCP compliance	Yes
Video bandwidth	Single-link 225MHz [6.75Gbps]
Video support	480i / 480p / 720p / 1080i / 1080p60 up to 36-bit color
Transmission over UTP cable (24-bit)	Full HD (1080p) – 40m (130ft) [Cat5e] / 50m (165ft) [Cat6] HD (720p/1080i) – 50m (165ft) [Cat5e] / 60m (200ft) [Cat6]
Audio support	Surround sound (up to 7.1ch) or stereo digital audio
Signal equalization	8-level digital output signal equalization
Input TMDS signal	1.2 Volts [peak-to-peak]
Input DDC signal	5 Volts [peak-to-peak, TTL]
ESD protection	[1] Human body model — ±19kV [air-gap discharge] & ±12kV [contact discharge] [2] Core chipset — ±8kV
PCB stack-up	4-layer board [impedance control — differential 100Ω; single 50Ω
Input	1x RJ-45
Output	1x HDMI + 1x RJ-45 + 1x 3.5mm audio socket
HDMI connector	Type A [19-pin female]
RJ-45 connector	WE/SS 8P8C with 2 LED indicators
3.5mm connector	Earphone jack for stereo audio
DIP switch	None
Rotary control switch	HDMI Signal Level
Mechanical	
Housing	Metal enclosure
Dimensions [L x W x H]	180 x 106 x 30 mm
Weight g	530 g
Fixedness	Wall-mounting case
Power supply	5V 4A DC
Power consumption	7.5 Watts [max]
Operation temperature	0~40°C [32~104°F]
Storage temperature	-20~60°C [-4~140°F]
Relative humidity	20~90% RH [no condensation]

PANEL DESCRIPTIONS

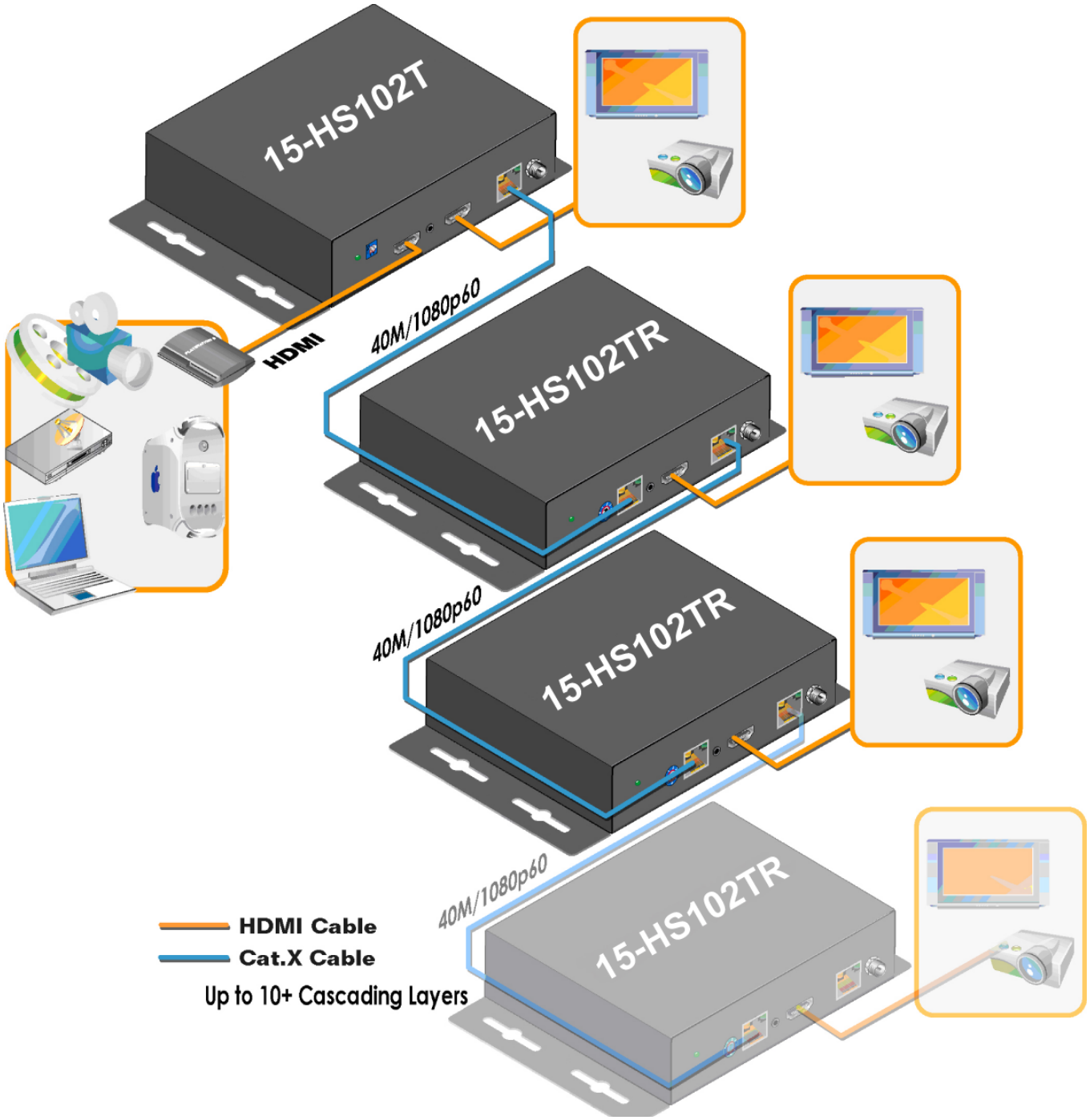


1. **HDMI / DVI LED:** Input signal format indicator [bright: HDMI signal, dim: DVI signal]
2. **16-level rotary control:** Adjust the 16-level equalization control corresponding to the transmission distance of receiving HDMI signals. For surround sound audio output, please adjust from 0-to-7 (longest-to-shortest transmission length). For stereo audio output, please adjust from 8-to-F (longest-to-shortest transmission length). It is recommended to adjust from 7-to-0 or from F-to-8 to find the optimal visual experience.
3. **HDMI Signal IN:** Link to 15-HS102T or 15-HS102TR with a Cat-5/5e/6 cable.
4. **Audio OUT:** Plug in a local speaker here.
5. **HDMI OUT:** Connect to a local HDMI display with a HDMI male-male cable here.
6. **HDMI Signal OUT:** Link to each HDMI display via a Cat-5/5e/6 cable with a HDMI over Cat.X receiver 15-HE101R or 15-HE101PR; or link to another 15-HS102TR for cascading.
7. **+5V DC:** Connect to 5V 4A DC power supply.

PACKAGE CONTENTS

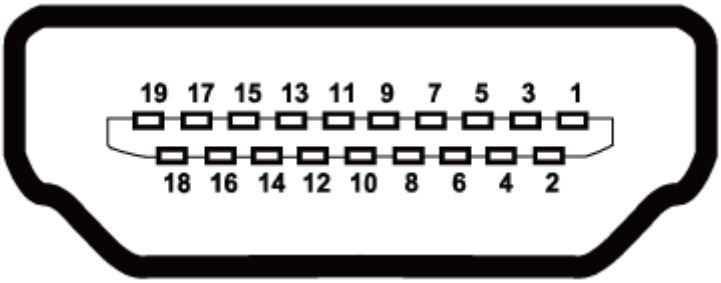
15-HS102TR	x1	DC 5V 4A wall wart	x1
User Manual	x1	Screws	x4
Plastic-Conical-Anchor	x4		

CONNECTION DIAGRAM



PIN DEFINITION

HDMI

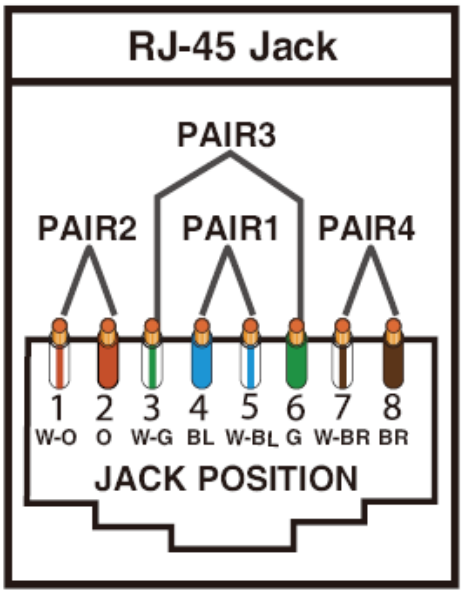


Type A (Receptacle) HDMI

Pin 1	TMDS Data2+	Pin 11	TMDS Clock Shield
Pin 2	TMDS Data2 Shield	Pin 12	TMDS Clock–
Pin 3	TMDS Data2–	Pin 13	NC
Pin 4	TMDS Data1+	Pin 14	Reserved (N.C. on device)
Pin 5	TMDS Data1 Shield	Pin 15	SCL
Pin 6	TMDS Data1–	Pin 16	SDA
Pin 7	TMDS Data0+	Pin 17	DDC/CEC Ground
Pin 8	TMDS Data0 Shield	Pin 18	+5V Power
Pin 9	TMDS Data0–	Pin 19	Hot Plug Detect
Pin 10	TMDS Clock+		

RJ45 / Cat.X

Data Link TIA/EIA-568-B		
PIN	Color	Function
1	W-O	TX0-
2	O	TX0+
3	W-G	TX1-
4	BL	TX2-
5	W-BL	TX2+
6	G	TX1+
7	W-BR	TXC-
8	BR	TXC+



NOTICE

1. If the DVI or HDMI device requires the EDID information, please use EDID Reader/Writer to retrieve and provide DVI or HDMI display EDID information.
2. All HDMI over Cat.X transmission distances are measured using Belden 1583A CAT5e 125MHz UTP cable and ASTRODESIGN Video Signal Generator.
3. The transmission length is largely affected by the type of Cat-5/5e/6 cables, the type of HDMI sources, and the type of HDMI display. The testing result shows solid UTP cables (usually in the form of 330m bulk cables) can transmit a lot longer signals than stranded UTP cables (usually in the form of fixed length patch cords). Shielded STP cables are better suited than unshielded UTP cables. A solid UTP Cat-5e cable shows longer transmission range than stranded STP Cat-6 cable. For long extension applications, solid UTP/STP cables are the only viable choice.
4. EIA/TIA-568-B termination (T568B) for category cables is recommended.
5. To reduce the interference among the unshielded twisted pairs of wires in Cat-5/5e/6 cable, one can use double shielded STP cables to improve EMI problems, which is worsen in long transmission.
6. Because the quality of the CAT5/6 cables has the major effect on how long the transmission limit can achieve and how good is the received picture quality, the actual transmission range is subject to one's choice of Cat-5/5e/6 cables. For desired resolutions greater than 1080i or 1280x1024, a Cat-6 cable is recommended.
7. If your HDMI display has multiple HDMI inputs, it is found that the first HDMI input [HDMI input 1] generally can produce better transmission performance among all HDMI inputs.

Performance Guide for HDMI over Category Cable Transmission

Performance rating		**Type of category cable**		
Wiring	**Shielding**	**CAT5**	**CAT5e**	**CAT6**
Solid	Unshielded (UTP)	★★★	★★★★	★★★★★
	Shielded (STP)	★★★	★★★	★★★★
Stranded	Unshielded (UTP)	★	★★	★★
	Shielded (STP)	★	★	★★
Termination		Please use **EIA/TIA-568-B** termination (**T568B**) at any time		

WARRANTY

The SELLER warrants the **15-HS102TR 1x2 HDMI Splitter/Repeater over Cat.X with Local Out** free from defects in the material and workmanship for 1 year from the date of purchase from the SELLER or an authorized dealer. Should this product fail to be in good working order within 1 year warranty period, The SELLER, at its option, repair or replace the unit, provided that the unit has not been subjected to accident, disaster, abuse or any unauthorized modifications including static discharge and power surge. This warranty is offered by the SELLER for its BUYER with direct transaction only. This warranty is void if the warranty seal on the metal housing is broken.

Unit that fails under conditions other than those covered will be repaired at the current price of parts and labor in effect at the time of repair. Such repairs are warranted for 90 days from the day of reshipment to the BUYER. If the unit is delivered by mail, customers agree to insure the unit or assume the risk of loss or damage in transit. Under no circumstances will a unit be accepted without a return authorization number.

The warranty is in lieu of all other warranties expressed or implied, including without limitations, any other implied warranty or fitness or merchantability for any particular purpose, all of which are expressly disclaimed.

Proof of sale may be required in order to claim warranty. Customers outside Taiwan are responsible for shipping charges to and from the SELLER. Cables and power adapters are limited to a 30 day warranty and must be free from any markings, scratches, and neatly coiled.

The content of this manual has been carefully checked and is believed to be accurate. However, The SELLER assumes no responsibility for any inaccuracies that may be contained in this manual. The SELLER will NOT be liable for direct, indirect, incidental, special, or consequential damages resulting from any defect or omission in this manual, even if advised of the possibility of such damages. Also, the technical information contained herein regarding the **15-HS102TR** features and specifications is subject to change without further notice.

2012/11/5